

# 5. Carbon Sequestration

## Background

Carbon sequestration plays an important role in the global carbon cycle. Green plants remove (sequester) carbon from the atmosphere through photosynthesis, extracting carbon dioxide from the air, separating the carbon atom from the oxygen atoms, returning oxygen to the atmosphere, and using the carbon to make biomass in the form of roots, stems, and foliage.

Every year in the United States and throughout the world a very large amount of carbon dioxide—on the order of 100 billion metric tons—is sequestered in biomass.<sup>43</sup> At the same time, carbon is released to the atmosphere from vegetative respiration, combustion of wood as fuel, degradation of manufactured wood products, consumption of biomass for food by animals, and the natural decay of expired vegetation. The net numerical difference, or flux, between carbon sequestration and release can be viewed as a measure of the relative contribution of biomass to the carbon cycle. World flux associated with Earth's living matter is difficult to measure, but biomass is thought to provide a net "sink" equivalent to about 5 billion metric tons of carbon dioxide per year.<sup>44</sup>

Forests can play an important role in offsetting human-produced carbon emissions. On average, trees are approximately 25 percent carbon by weight (live trees are approximately 50 percent water by weight, and oven-dried wood is approximately 50 percent carbon by weight).<sup>45</sup> The amount of carbon a plant can sequester depends on a number of variables, including species and age, but can be quite large. For example, one large sugar maple tree is capable of removing more than 450 pounds of carbon dioxide from the atmosphere in a year. At that rate, preserving 29 trees per operating automobile in the United States would offset all U.S. automobile-related carbon dioxide emissions.<sup>46</sup>

Carbon sequestration on a national scale is substantial; the U.S. Department of Agriculture (USDA) Forest Service estimates that all the forests in the United States combined sequestered a net of approximately 281 million metric tons of carbon per year from 1952 to 1992, offsetting approximately 25 percent of U.S. anthropogenic emissions of carbon during that period.<sup>47</sup>

## Projects Reported

Seventy-four entities reported projects involving forestry or natural resources that sequestered carbon or reduced emissions in 1997 (Table 12). The reporters included 65 electric utilities, 3 operating subsidiaries of an independent power producer, a major petroleum company, a real estate company, a nonprofit forestry organization, a university, a fabricated metals product manufacturer, and an agricultural services company. A total of 302 carbon sequestration projects were reported, an increase of 53 percent over the previous reporting cycle. Forestry projects were the second most commonly reported project type after electricity supply (380), accounting for 25 percent of all the projects reported for 1997 (see Table 2 in Chapter 1). The reported forestry projects were dispersed over a wide geographic area, including 44 States and 8 foreign countries. A total of 241 domestic and 61 international forestry projects were reported.

The total sequestration and reduction in emissions reported for 1997 increased by 11 percent from the previous year, to 9.7 million metric tons of carbon dioxide (Table 12). Carbon sequestration projects typically are considerably smaller than projects that reduce emissions of carbon dioxide (such as electricity supply and energy end use). Seventy-five percent of the forestry projects reported for 1997 sequestered between 10 and 10,000 metric tons of carbon dioxide (Figure 14), with the median being less than 200 metric tons. A significant

<sup>43</sup>Intergovernmental Panel on Climate Change, *Greenhouse Gas Inventory Reference Manual*, IPCC Guidelines for National Greenhouse Gas Inventories, Vol. 3 (Paris, France, 1995), p. 5.2, <http://www.iea.org/ipcc.htm>.

<sup>44</sup>Intergovernmental Panel on Climate Change, *Climate Change 1995: The Science of Climate Change* (Cambridge, UK: Cambridge University Press, 1996), p. 77.

<sup>45</sup>R.A. Birdsey, *Carbon Storage and Accumulation in United States Forest Ecosystems* (Washington, DC: USDA Forest Service, 1992), p. 12.

<sup>46</sup>Average mileage and fuel consumption for passenger cars from Energy Information Administration, *Annual Energy Review 1997*, DOE/EIA-0384(97) (Washington, DC, July 1998), p. 53. Carbon dioxide emissions per mile driven and gallon of motor fuel from U.S. Department of Energy, *Sector-Specific Issues and Reporting Methodologies Supporting the General Guidelines for the Voluntary Reporting of Greenhouse Gases Under Section 1605(b) of the Energy Policy Act of 1992*, DOE/PO-0028 (Washington, DC, October 1994), Vol. 2, p. 4.19.

<sup>47</sup>R.A. Birdsey and L.S. Heath, "Carbon Changes in U.S. Forests," in L.A. Joyce (ed.), *Productivity of America's Forests and Climate Change*, General Technical Report RM-GTR-271 (Fort Collins, CO: USDA Forest Service, 1995).

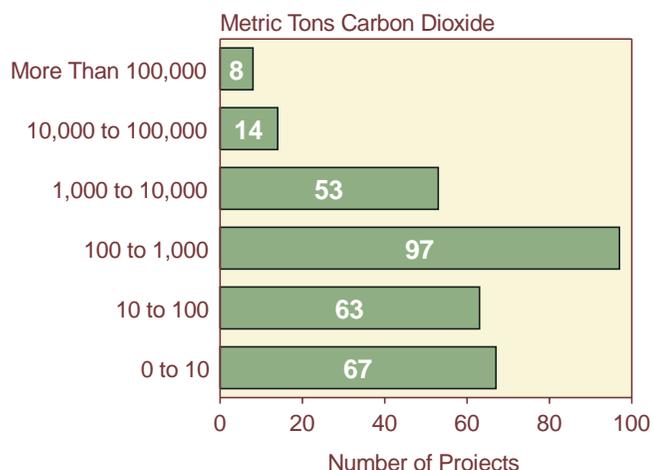
**Table 12. Number of Projects and Sequestration and Net Reductions Reported for Sequestration Projects, Data Years 1994-1997**

Project Type	Data Year			
	1994	1995	1996	1997
Number of Reporters . . . . .	40	62	67	74
Number of Projects . . . . .	78	199	198	302
Sequestration and Net Reductions (Metric Tons Carbon Dioxide) . . . . .	772,330	1,247,430 <sup>(R)</sup>	8,713,126	9,691,464

(R) = revised.

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

**Figure 14. Carbon Sequestration Projects by Amount of Carbon Sequestered, Data Year 1997**



Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

number (16 percent) of the reported projects were urban forestry projects, involving the planting of trees in urban and suburban areas.<sup>48</sup> Urban forestry projects are typically much smaller than forestry projects undertaken in rural or wilderness areas. The average carbon dioxide sequestration reported for 1997 for urban forestry projects was just 92 metric tons. Projects in rural or wilderness areas are sometimes large: eight such projects sequestered more than 100,000 metric tons of carbon dioxide each in 1997. On average, sequestration projects sequestered 32,852 metric tons of carbon dioxide equivalent.

Of the projects reporting carbon sequestration for 1997, most (224 or 76 percent) involved tree planting, including afforestation, reforestation, urban forestry, and

woody biomass production or agroforestry (Table 13).<sup>49</sup> These projects accounted for 23 percent of the sequestration (and related emission reductions) reported for 1997. Although only 38 forest preservation projects were reported, they accounted for 76 percent of the sequestration reported for 1997. Ninety-six percent of the total sequestration for 1997 was reported on behalf of foreign projects, which include some very large forest preservation and agroforestry initiatives.

More than half (62 percent) of the reported forestry projects were undertaken in part to fulfill commitments made under the Climate Challenge program. In addition, 29 (10 percent) were undertaken as part of the U.S. Initiative on Joint Implementation (USII). Established under the Climate Change Action Plan (CCAP),<sup>50</sup> the USII is a pilot program that seeks to encourage foreign-based emission reduction and carbon sequestration projects conducted by U.S. and non-U.S. partners. Partners must submit a proposal to USII to receive approval of proposed projects. Thus far, 36 projects have been approved,<sup>51</sup> encompassing a wide variety of measures, including energy conservation in district heating systems, conversion of biomass waste to energy, wind power, and forestry projects. The following USII-approved forestry projects were reported to the Voluntary Reporting Program: the Rio Bravo Carbon Sequestration Pilot Project (in Belize); Oregon State University's RUSAFOR-SAP project (Russia); New England Electric System Companies' Reduced Impact Logging Project (Malaysia); and the Noel Kempf Mercado Climate Change Action Project (Bolivia).

In addition to the USII projects, one urban forestry project was reported as part of the Cool Communities program sponsored by the U.S. Department of Energy (DOE), which seeks to reduce energy consumption associated with air conditioning through the use of lighter

<sup>48</sup>Urban forestry projects include projects reported as general tree planting projects on Form EIA-1605EZ.

<sup>49</sup>Afforestation is the planting trees in unforested areas. Reforestation is the planting of trees in forest areas that have recently been harvested. Urban forestry is the planting of trees individually or in small groups in urban or suburban settings. Agroforestry is the cultivation of trees in plantations for fuel or fiber.

<sup>50</sup>President William J. Clinton, *The Climate Change Action Plan* (Washington, DC, October 1993), Appendix II, <http://www.gcric.org/USCCAP/toc.html>.

<sup>51</sup>U.S. Department of Energy, "Four Central and South American Projects to Reduce Over 100 Million Tons of Greenhouse Gases," Press Release (Washington, DC, March 17, 1999).

**Table 13. Number of Sequestration Projects Reported by Project Type, Data Years 1994-1997**

Project Type	Number of Projects Reported			
	1994	1995	1996	1997
Afforestation . . . . .	26 (R)	38	38	87
Reforestation . . . . .	15	82	80	92
Urban Forestry . . . . .	27 (R)	40	41	47
Modified Forest Management . . . . .	12	20	10	33
Woody Biomass Production and Other Agroforestry . . . . .	8 (R)	14	2	3
Forest Preservation . . . . .	2 (R)	24	29	38
Conservation Tillage . . . . .	1	1	1	2
Other Projects . . . . .	3 (R)	4	6	11

(R) = revised.

Notes: Urban forestry includes general tree planting projects reported on Form EIA-1605EZ. Some projects are counted in more than one category.

Source: Energy Information Administration, Forms EIA-1605 and EIA-1605EZ.

wall and roof colors and the planting of shade trees around buildings. The program provides technical assistance and education to its participants.

### Afforestation and Reforestation

More than half (57 percent) of the sequestration projects reported for 1997 involved either afforestation or reforestation. All but one of the 172 afforestation and reforestation projects are domestic. The exception is Oregon State University's RUSAFOR-SAP project in Russia, which includes reforestation of a 50-hectare site that suffered a forest fire and afforestation of two sites totaling 450 hectares.

Two years ago, American Forests, a nonprofit conservation organization, and American Electric Power, Inc. (AEP), a large investor-owned utility, accounted for nearly 73 percent of the 114 domestic afforestation and reforestation projects reported for 1995. For the 1997 reporting cycle, American Forests and AEP increased the number of afforestation and reforestation projects they reported by 24 percent; however, their combined share of the total number of projects in the two categories fell to 60 percent, because the total number of reports on afforestation and reforestation projects increased by 50 percent.

A large part of the increase in the number of domestic afforestation and reforestation projects can be attributed to two domestic programs initiated in 1997 by the UtiliTree Carbon Company.<sup>52</sup> Shares in the new UtiliTree projects were reported by 21 of the participating utilities, resulting in 41 project reports for carbon

dioxide sequestered in 1997.<sup>53</sup> The Western Oregon Carbon Sequestration Project is an afforestation project on nonindustrial timberland in Oregon, where native species, such as Douglas fir, western red cedar, and ponderosa pine, were planted in 1997 on privately owned sites totaling 79 acres. A long-term forest management plan has been developed for each site and incorporated into a contract with the landowner. The contracts obligate the landowners to keep the sites forested for a minimum of 65 years. In the Mississippi Valley Bottomland Hardwood Restoration Project, UtiliTree is investigating the feasibility of sequestering carbon by restoring bottomland hardwood forest on marginal farmland located in Catahoula Parish, Louisiana. This pilot study is evaluating restoration techniques on an 80-acre tract. An additional 70,000-acre tract is available for large-scale afforestation efforts should the pilot phase prove successful.

American Forests reported a total of 85 projects under its Global ReLeaf Forests program, 24 of which were initiated after 1995. Global ReLeaf supports the restoration of U.S. forest ecosystems that have been damaged by natural events or human actions. American Forests plans to plant 20 million trees through Global ReLeaf by the year 2000. Through the end of 1997, nearly 6 million trees had been planted, sequestering 38,627 metric tons of carbon dioxide in 1997—enough to offset carbon dioxide emissions from about 6,500 automobiles.<sup>54</sup> All but five of the Global ReLeaf projects involved reforestation.

AEP reported 15 projects involving afforestation on land owned by its operating companies, which sequestered a reported 22,901 metric tons of carbon dioxide in 1997.

<sup>52</sup>The UtiliTree Carbon Company, managed by the Edison Electric Institute, is a partnership of 40 investor-owned electric utilities.

<sup>53</sup>One utility reported its share in only one of the two projects.

<sup>54</sup>Average mileage and fuel consumption for passenger cars from Energy Information Administration, *Annual Energy Review 1997*, DOE/EIA-0384(97) (Washington, DC, July 1998), p. 53. Carbon dioxide emissions per mile driven and gallon of motor fuel from U.S. Department of Energy, *Sector-Specific Issues and Reporting Methodologies Supporting the General Guidelines for the Voluntary Reporting of Greenhouse Gases Under Section 1605(b) of the Energy Policy Act of 1992*, DOE/PO-0028 (Washington, DC, October 1994), Vol. 2, p. 4.19.

Six of the projects were initiated in 1996 or 1997. AEP also reported 11 afforestation projects on its own land initiated in 1995 and earlier, fewer than the 21 projects reported for 1995. It appears, however, that AEP has consolidated and renamed its afforestation projects to simplify reporting: the number of acres involved in its projects increased from 2,041 in 1995 to 9,792 in 1997.

DTE Energy/Detroit Edison reported on two afforestation efforts, including an existing effort with new activity in 1996 and 1997 and a new effort initiated in 1996.<sup>55</sup> The existing effort involved plantings on various vacant plots owned by Detroit Edison or its customers. In 1996 and 1997, 813,610 trees were planted on 1,134 acres. In addition, in a cooperative venture with the Michigan Department of Natural Resources, DTE/Detroit Edison was responsible for the planting of about 6 million tree seedlings on State Forest land in 1996 and 1997. Most of the trees planted were jack pine intended to provide habitat for the endangered Kirtland warbler. Together, the afforestation efforts conducted by DTE/Detroit Edison within its service territory sequestered a reported 29,148 metric tons of carbon dioxide in 1997.

Another new domestic tree planting effort was reported for 1997 by South Carolina Electric and Gas Company (SCE&G). SCE&G's Forest Management Plan has involved the planting of a minimum of 100,000 tree seedlings annually since 1993. SCE&G also continues to manage the 6 million seedlings already planted on company lands.

## Urban Forestry

Urban forestry projects are unique, in that under some circumstances they can reduce energy consumption as well as sequester carbon. Shade trees planted near buildings reduce summer air conditioning requirements; in addition, trees can also act as windbreaks, reducing heating needs in the winter. A total of 47 urban forestry projects were reported for 1997. For the 42 urban forestry projects for which estimates were developed, a total of 4,320 metric tons of carbon dioxide was sequestered in 1997—an amount that would offset less than 0.1 percent of the emissions from a 1,000-megawatt coal-fired power plant.<sup>56</sup>

The emission reductions associated with energy savings were provided for only four urban forestry projects.<sup>57</sup> There are probably two main reasons why the effects of urban forestry on energy consumption are reported so

infrequently. First, not all such projects involve the planting of shade trees near buildings. Urban forestry encompasses tree planting in all urban and suburban settings, including parks, utility rights of way, and city streets, as well as around buildings. Second, it is often difficult to estimate the energy savings resulting from urban forestry projects. Models have been developed for this purpose, but they are complex and not widely used. Typically, the emission reductions resulting from energy saved by urban tree planting projects are several times greater than the carbon sequestration achieved by the trees themselves. For example, PacifiCorp reported that the trees planted in its urban forestry program in Salt Lake City, Utah, sequestered 3.8 metric tons of carbon dioxide equivalent in 1997, whereas the carbon dioxide emission reductions associated with the energy saved by the trees was estimated at 156.7 metric tons.

Urban forestry projects were reported by 36 reporters, all but one of which were electric utilities. The exception was DeBourgh Manufacturing Company, a fabricated metal products manufacturer, which reported planting 50 trees in a landscaping project.

## Forest Preservation

A total of 38 forest preservation projects were reported for 1997, all but three of which were foreign. The two largest forest preservation projects were reported by AES Hawaii and AES Shady Point, subsidiaries of the AES Corporation (see box on page 41). Together, the two AES projects sequestered a reported 5.68 million tons of carbon dioxide in 1997, which represents 77 percent of the sequestration reported for forest preservation projects.

Two utilities (AEP and PacifiCorp) and a petroleum company (BP America) reported on the Noel Kempf Mercado Climate Action Project in Bolivia. This project was accepted by the USJI in November 1996. It involves the preservation of 634,286 hectares of land on the southern and western boundary of the Noel Kempf Mercado National Park by incorporating it into the park. The project includes the following components: (1) carbon dioxide emission reductions through the cessation of logging activities and the protection of forest land from conversion to agricultural use; (2) protection, regeneration, and preservation; and (3) leakage prevention.<sup>58</sup> The project increased sequestration or reduced emissions by a reported 1 million metric tons of carbon dioxide in 1997.

<sup>55</sup>For both efforts, DTE Energy/Detroit Edison reported each year's planting activity separately, resulting in a total of five project reports.

<sup>56</sup>Assuming a power plant with a heat rate of 12,000 Btu per kilowatthour, operating at 85 percent availability, using subbituminous coal that emits 227.4 pounds of carbon dioxide per million Btu.

<sup>57</sup>Including one project for which sequestration effects were not reported.

<sup>58</sup>Leakage refers to the migration of logging and land-clearing activities that would have occurred in the preserve to areas outside the preserve, which would offset the sequestration achievements of the project.

## AES Corporation Forestry Projects Offset Power Plant Emissions

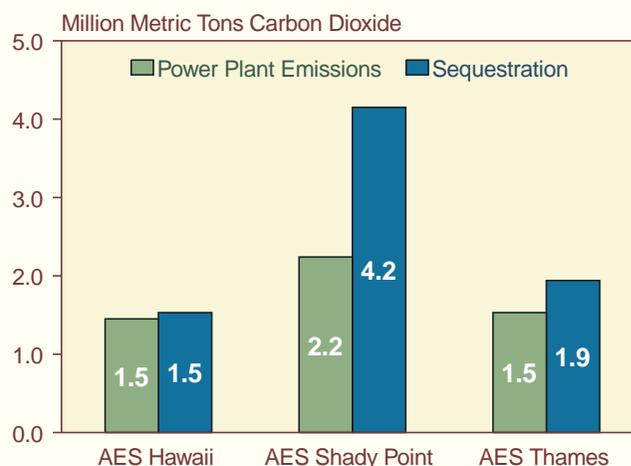
The AES Corporation, an independent power producer based in Virginia, has developed forestry projects intended to offset the emissions from three of its power plants. Two of the projects involve forest preservation and the third is an agroforestry initiative that will include tree planting. Each project was reported by the responsible AES operating subsidiary, and each subsidiary reported both the total emissions from its power plant and the annual sequestration for the forestry project it sponsored. Each of the three AES subsidiaries reported its actions both as projects and as entity-wide emissions and offsets. In 1997, reported carbon dioxide emissions for the three AES plants totaled 5.2 million metric tons, and sequestration from the three forestry projects totaled 7.62 million metric tons, more than offsetting the power plant emissions for that year (see figure).

AES Hawaii is funding a forest preservation project in Paraguay with the Nature Conservancy and the Moises Bertoni foundation to offset the emissions of a 180-megawatt circulating fluidized-bed coal-fired cogeneration plant on the island of Oahu, Hawaii. The project will protect the 143,000-acre Mbaracayu Nature Reserve, one of South America's last remaining major tracts of undisturbed dense tropical forest. Establishment of the preserve prevented the sale of the Mbaracayu to a local timber products company. AES Hawaii's report indicates that the project will preserve 14.6 million metric tons of carbon sequestration over 35 years, equivalent to an average of 1.53 million metric tons of carbon dioxide per year, which is more than the 1.43 million metric tons of carbon dioxide emitted annually by the power plant.

AES Shady Point is supporting a program coordinated by OXFAM America to protect tropical forests in the Amazon regions of Peru, Ecuador, and Bolivia. The project will offset emissions from AES Shady Point's coal-fired plant in Oklahoma. OXFAM America is working with indigenous groups to gain control of the tropical forests and develop sustainable resource

extraction plans, which are expected to protect 1.2 million acres of pristine rain forest. AES suggests that, without the project, 15 percent of the protected forest would have been cleared over the next 15 years, increasing average net annual emissions by 4.15 million metric tons of carbon dioxide—nearly twice the 2.24 million metric tons of carbon dioxide emitted by the AES Shady Point generating plant in 1997.

## AES Reported Emissions and Sequestration, Data Year 1997



Source: Energy Information Administration, Form EIA-1605.

AES Thames is sponsoring the CARE Guatemala agroforestry project, which includes the planting of between 40 and 50 million fruit, lumber, and fuelwood trees on forest plantations over a 10-year period. Sustainable use of the plantations is intended to eliminate the need to clear threatened existing forests. Between 1990 and 1997, trees were planted on 127,650 acres. AES reports that the project sequestered 1.94 million metric tons of carbon dioxide in 1997, which exceeded the 1.45 million tons emitted by the AES Thames fluidized-bed coal plant.

The Rio Bravo Carbon Sequestration Pilot Project, a forest preservation project in Belize, was included in the reports submitted by 29 utilities, each of which reported its prorated share of the total sequestration for the project. Begun in 1995, the project is being undertaken through a partnership between Cinergy Corporation, DTE/Detroit Edison, PacifiCorp, Wisconsin Electric Power Co., the UtiliTree Carbon Company, the Nature

Conservancy, and a Belizean nongovernmental organization (Programme for Belize). The project includes the purchase of a 14,400-acre parcel of endangered forest threatened with conversion to agriculture. The entire project sequestered an estimated 807,330 metric tons of carbon dioxide in 1997, of which 625,125 metric tons (77 percent) was reported to the Voluntary Reporting of Greenhouse Gases Program.<sup>59</sup>

<sup>59</sup>Several UtiliTree participants and one of the utility partners did not submit reports to the Voluntary Reporting Program for data year 1997.

Domestic forest preservation projects were reported by Wisconsin Power & Light, Tacoma Public Utilities, and Wisconsin Public Service Corporation. Wisconsin Power & Light reported sequestering 1,597 metric tons of carbon dioxide in 1997 by maintaining forested buffer lands around its power plants. Tacoma Public Utilities reported preserving nearly 11,000 acres of forest but did not estimate the sequestration achieved. Wisconsin Public Service Corporation reported forest preservation as a component of its afforestation and reforestation efforts.

## Modified Forest Management

Of the 33 modified forest management projects covering sequestration of carbon in 1997, 25 reports were associated with two related reduced-impact logging initiatives in Malaysia. The first initiative was a pilot project sponsored by New England Power Company and reported by its parent company, New England Electric System (NEES) Company.<sup>60</sup> Started in 1992, this project implemented new logging techniques with the goal of reducing logging damage by 50 percent. The new techniques include pre-cutting of vines, directional felling, and planned extraction of timber on properly constructed and used skid trails. Twenty-four utilities reported their shares in the second initiative—a full-scale project sponsored by UtiliTree that introduced reduced-impact logging practices to 2,500 acres of forest beginning in 1997. Together, these two initiatives increased sequestration by a reported 53,300 metric tons carbon dioxide equivalent in 1997.

Between 1991 and 1997, AEP selectively harvested more than 2,500 acres of upland central hardwood and bottomland hardwood stands to improve growing space relationships and maximize growth rates. The efforts increased sequestration on the affected tracts by a reported 3,778 metric tons of carbon dioxide in 1997. DTE Energy/Detroit Edison conducted similar thinning operations in previously unmanaged wood lots and reported increasing sequestration by nearly 800 metric tons in 1997. Enhanced forest management activities were also reported by Wisconsin Power & Light and Wisconsin Public Service Corporation as components of their afforestation or reforestation activities.

## Forest Plantations

Forest plantations include woody biomass production and agroforestry. Woody biomass production is the cultivation of trees in intensively-managed plantations for the purpose of producing fuel or fiber. Agroforestry

involves mixing trees with annual crops to provide wind shelter, stabilize soil, and produce fuelwood and fruit crops.

Woody biomass production projects were reported by Minnesota Power and J.M. Gilmer and Company. Minnesota Power has negotiated contracts with land owners for the planting of hybrid poplars. Since 1994, trees have been planted on 2,682 acres of cleared land, resulting in the sequestration of more than 22,000 metric tons of carbon dioxide in 1997. The trees will be harvested after 12 years for use by the forest products industry or as biomass for energy production. J.M. Gilmer and Company established a short-rotation cottonwood plantation on a river bottom site in Alabama. The cottonwoods will also be harvested on a 12-year rotation and used as biofuel (displacing fossil fuel) or for pulpwood.

AES Thames reported an agroforestry project in Guatemala that involves establishing a plantation of fruit, pulp, and fuel wood trees (see box on page 41). AES Thames reported that its project sequestered nearly 2 million metric tons of carbon dioxide in 1997.

## Other Sequestration Projects

Not all carbon sequestration projects involved forestry. New projects reported for 1997 by Environmentally Correct Concepts, Inc. (ECC), Entergy Services, Inc., and UNICOM (formerly Commonwealth Edison Company) used other approaches to increase carbon sequestration. ECC established permanent pastures on three tracts, comprising 33 acres on a farm in Illinois used primarily for cattle grazing and hay production. ECC reports that 55 percent of the carbon fixed by grassy and herbaceous plants is stored below ground in roots, corms, tubers, etc., and that the accumulated carbon is either retained in the plant structures themselves or released into the soil as the plants decay. The remainder of the fixed carbon is stored above ground in structures such as leaves, stems, and seeds. ECC has implemented enhanced management techniques to increase the accumulation of carbon below ground. ECC estimated the average sequestration for 1997 for these tracts at 8.8 metric tons of carbon dioxide per acre (5.7 below ground and 3.1 above ground).

Entergy Services, Inc., initiated a project in 1996 to enhance 4,000 acres of degraded wetland by modifying the existing hydrologic regime and planting wetland grasses. The project sequestered a reported 39,844 metric tons of carbon dioxide in 1997.

<sup>60</sup>In August 1998, USGen New England, Inc. (USGenNE) completed the acquisition of New England Electric System (NEES) Company's hydroelectric and fossil power generation business previously operated by New England Power. As part of the acquisition, USGenNE acquired the rights to the emission reductions and carbon sequestration achieved by this and other projects.

Beginning in 1996, UNICOM began reusing wood utility poles by applying a “pole bandage” impregnated with sodium fluoride at the ground line to reinforce the wood preservative. The same technique can also extend the life of poles set in concrete. UNICOM estimates that about 3 percent of the 20,000 poles it replaces each year could be reused in this way. UNICOM reported reusing 870 poles in 1997, and it contends that its action avoided the harvest of the same number of southern longleaf pines, each of which sequesters an estimated 238 pounds of carbon dioxide a year.

Other carbon sequestration projects reported for 1997 and previous years include the following: conservation tillage projects reported by PP&L Resources, Inc., and Wisconsin Power & Light; UNICOM’s planting of Illinois prairie grasses on company properties; Wisconsin Power & Light’s restoration of 700 acres of abandoned old field to prairie/savanna habitat; and Salt River Project’s halophyte farming.